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FIRST MONTHLY NARRATIVE REPORT

15 August 1965

REFERENCE

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Job No. 645

REPORTING INTERVAL

1 July 1965 - 10 August 1965

OBJECTIVE

The objectives of this program are to define the operational objectives for automatic screening of photographic intelligence data; to study, test and evaluate the techniques applicable to the problem; and to generate a design for an operational prototype system. Extensive experimentation on existing scanning and processing equipment coupled with computer simulations of recognition systems will be used to test the feasibility of several schemes. The final system design will be based upon the results of the techniques study and the operational objectives defined in the program.

STATUS OF ACTIVITIES & ACCOMPLISHMENTS

Under the new program, the principal efforts have been in two areas: the researching of literature research relating to techniques, and the effort devoted to the experimental program.

In the research effort, all available bibliographies on pattern recognition or related information processing topics have been

reviewed. A number of papers on related topics have been ordered to augment the already large library of material on hand at An annotated listing of the applicable techniques is being prepared from this data to serve as the basis for pending experimental and design effort.

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Under the previous, and yet to be completed, sponsor program, the experimental effort has pointed the way to more reliable experimental techniques which are being pursued immediately. For example, an interchange of resistors and diodes is currently underway to double the effective signal output at each filter output in the pre-normalizing system. Also, a study of alternate scanning techniques is being made to provide a means of avoiding the scanner noise encountered in the previous program. The techniques for processing the prenormalized data on our G15 computer are also being investigated. Programs of limited capacity are now available which, in one case, simulate a form of CONFLEX recognition system and, in another, test the integral scanning process on a binary pattern matrix. Each program can be used to test certain aspects of the processing and recognition system. In line with our intended experimental program, we are making the plans for necessary modifications and additions to the prenormalizing system. We have ordered the rack, tape-punch drawer, punch circuitry, M-sequence generator circuitry and other miscellaneous parts required for this portion of the work. Our plan is to prepare punched-tape data on the prenormalized data to be processed in a simulated recognition system on the G15 computer.

DIFFICULTIES ENCOUNTERED

None

TECHNICAL AGREEMENTS MADE

None

PROGRAM FOR THE NEXT INTERVAL

During the next reporting interval, the two areas mentioned above will be foremost in the effort. We will compile as much information as possible on techniques before the full experimental effort is begun. The modifications and additions to the existing equipment will be continued to permit further testing of the integral scan processor as intended. We will exercise great care in the plan of our experimental program to insure that significant information on the potentially useful methods can be obtained as rapidly as possible.

SPECIAL REPORT -

At the time of this writing, the CONFLEX System is almost back in operation. The first test indicates that the new memory system is integrated successfully into the machine. Verification tests are now underway and are thus-far successful. A wrap-up of the experimental work on the program should begin within two weeks. We thus anticipate a final report delivery between six and eight weeks from this date.

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